AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently amended) A compound of formula

$$\begin{array}{c|c} R_1 & G_1 \\ R_1a & A \\ R_2 & R_{2a} \\ R_{2a} & G_2 \end{array}$$

or a pharmaceutically acceptable salt thereof, pharmaceutically acceptable prodrug thereof, an Novide thereof, a hydrate thereof or a solvate thereof

wherein

 G_1 and G_2 are independently L_1 - Cy_1 or L_2 - Cy_2 , provided that when R_1 and R_{1a} or R_4 and R_{4a} taken together form O or S, then G_1 is L_2 - Cy_2 and G_2 is L_1 - Cy_1 , or when R_2 and R_{2a} or R_3 and R_{3a} taken together form O or S, then G_1 is L_1 - Cy_1 and G_2 is L_2 - Cy_2 ; G_1 is L_1 - Cy_1 ;

G2 is L2-Cy2;

Cy₁ and Cy₂ are independently selected from-optionally substituted aryl, optionally substituted heteroaryl, optionally substituted eyeloalkyl, optionally substituted eyeloalkenyl, optionally substituted fused aryleyeloalkyl, optionally substituted fused aryleyeloalkenyl, optionally substituted fused arylheterocyclyl, optionally substituted fused arylheterocyclenyl, optionally substituted fused heteroarylcycloalkyl, optionally substituted fused heteroarylcycloalkyl, optionally substituted fused heteroarylcycloalkyl, optionally substituted fused heteroarylcycloalkenyl, optionally substituted fused heteroarylheterocyclyl and optionally substituted fused heteroarylheterocyclenyl;

$$L_1$$
 is O, NR₅, $S(O)_p$, $S(O)_pNR_5$, $C(X)Y$ or L_3 Q L_4 Q' L_5 , L_1 is $S(O)_2$.

L₂ is C₍₁₋₄₎ alkylene;

L₃ and L₅ are independently absent, optionally substituted alkylene, optionally substituted alkenylene or optionally substituted alkynylene;

L₄ is optionally substituted alkylene, optionally substituted alkenylene, or optionally substituted alkynylene;

Q and Q' are independently absent, O, S, NR₅, -S(O)_p, -S(O)_pNR₅ - or -C(X)Y;

A is CH or N;

 R_1 , R_{1a} , R_2 , R_{2a} , R_{3a} , R_{3a} , R_4 and R_{4a} are independently selected from hydrogen, carboxy, alkoxycarbonyl, Y_1Y_2NCO , optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heteroaryl and optionally substituted heteroaralkyl, or R_4 and R_{1a} , R_2 and R_{2a} , R_3 and R_{3a} , or R_4 and R_{4a} taken together form O or S;

R₃ and R_{3a} taken together form O;

m and n are independently 0, 1 or 2, provided that m and n are not both 0 and further provided that when R₁ and R_{1a} taken together form O or S, n is 1 and when R₄ and R_{4a} taken together form O or S, m is 1;

m is 1;

n is 1; and

L2 is absent or a group of formula

$$\begin{array}{c|c}
 & R_7 \\
\hline
 & R_8 \\
\end{array}$$

R₅ is hydrogen, optionally substituted alkyl, optionally substituted aralkyl, optionally substituted heteroaralkyl, R6O(CH2)v , R6O2C(CH2)x , Y1Y2NC(O)(CH2)x , or Y1Y2N(CH2)v ;

R6 is hydrogen, optionally substituted alkyl, optionally substituted aralkyl or optionally substituted heteroaralkyl;

 Y^{1} and $Y^{2}Y_{1}$ and Y_{2} are independently hydrogen, optionally substituted alkyl, optionally substituted arallyl or optionally substituted heteroaralkyl, or Y_{1} and $Y_{2}Y^{1}$ and $Y_{2}Y^{1}$ and $Y_{2}Y^{1}$ and $Y_{2}Y^{1}$ and $Y_{2}Y^{1}$ are linked form a monocyclic heterocyclyl₂;

R₂, R₈, R₉ and R₁₀ are independently selected from hydrogen, hydroxy, alkoxy, optionally substituted alkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted aralkyl and optionally substituted heteroaralkyl, provided that only one of R₂ and R₈ or one of R₉ and R₁₀ is hydroxy or alkoxy, and further provided when R₇, R₈, R₉ and R₁₀ is hydroxy or alkoxy, then the hydroxy or alkoxy is not α substituted to a N, O or S in Z;

X is O or S;

Y is absent or is selected from O, S and NR5;

Z is absent or is selected from optionally substituted lower alkenylene, optionally substituted lower alkynylene, O, S(O)_e, NR₅, NR₅C(O) and C(O)NR₅-;

x is 1, 2, 3 or 4;

v is 2, 3 or 4;

p is 1 or 2; and

q and r are independently 0, 1, 2 or 3, provided that q and r are not both 0;

2. (Currently amended) A compound according to claim 1 wherein Cy₂ contains at least one nitrogen atom and when Cy₂ is optionally substituted aryl, optionally substituted cycloalkyl, optionally substituted fused phenylcycloalkyl or optionally substituted fused phenylcycloalkenyl, then said nitrogen atom is a basic nitrogen atom.

- 3-4. (Cancelled)
- 5. (Currently amended) A compound according to claim 4-1 wherein R₃-and R_{3a} taken together are O; and R_{1a}, R_{1a}, R₂, R_{2a}, and R₄ are hydrogen, and R_{4a} is hydrogen or optionally substituted alkyl.
- 6. (Currently amended) A compound according to claim $4\underline{1}$ wherein R_3 and R_{3a} taken together are O; R_1 , R_2 , R_{2a} , and R_4 are hydrogen; and R_{1a} and R_{4a} are independently selected from hydrogen, carboxy, alkoxycarbonyl, Y_1Y_2NCO or optionally substituted alkyl.
- 7-8. (Cancelled)
- 9. (Currently amended) A compound according to claim 4 wherein L₂ is alkylene of one to three carbon atoms-or a group of formula

$$\begin{array}{c|c}
 & R_7 & R_9 \\
\hline
 & C & Z & C \\
\hline
 & R_8 & R_{10}
\end{array}$$

wherein Z is NR₅; q is 2; r is 0; R₅ is hydrogen or optionally substituted alkyl; and R₇ and R₈ are hydrogen.

10-11. (Cancelled)

- 12. (Original) A pharmaceutical composition comprising a pharmaceutically effective amount of a compound according to claim 1 and a pharmaceutically acceptable carrier.
- 13. (Withdrawn) A method for treating a patient suffering from a physiological condition capable of being modulated by inhibiting activity of Factor Xa comprising administering to said patient a pharmaceutically effective amount of a compound according to claim 1.
- 14-15. (Cancelled)
- 16. (Withdrawn) A method of inhibiting Factor Xa comprising contacting a Factor Xa

inhibitory amount of a compound according to claim 1 with a composition containing Factor Xa.

17-22. (Cancelled)

- 23. (Currently amended) A compound according to claim 19-1 wherein Cy₂ is optionally substituted with one or more groups selected from amino, carbamoyl, acylamino, heteroaryl, heterocyclenyl, heterocyclyl, alkyl, alkyloxycarbonyl, amidino, hydroxy, alkoxy, aryl, isourea, guanidino, acylhydrazino, acyl, cyano, carboxy, sulfamoyl, or halo.
- 24. (Currently amended) A compound according to claim 19-1 wherein Cy₂ is optionally substituted with one or more groups selected from amino, hydroxy, or halo.
- 25-27 (Cancelled)
- 28. (Currently amended) A compound according to claim 19-1 wherein Cy₁ is optionally substituted with one of more groups selected from amino, halo, hydroxyl, aryl, heteroaryl, amidino, alkyl, acylamino, carbamoyl, cyano, alkoxy, nitro, carbamate, sulfamyl.
- 29. (Currently amended) A compound according to claim $\underline{19}$ - $\underline{1}$ wherein at least one of $\underline{R_1}$ or $\underline{R_4}$ is alkoxyalkyl, alkylsulfinylalkyl, alkylsulfonylalkyl, alkoxycarbonylalkyl, hydroxyalkyl, acylaminoalkyl or carbamoylalkyl; and the corresponding $\underline{R_{1a}}$ or $\underline{R_{4a}}$ is hydrogen.
- 30. (Cancelled)
- 31. (Currently amended) A compound according to claim $\frac{19-1}{1}$ wherein at least one of R_1 or R_4 is lower alkyl, carboxy, alkoxycarbonyl or carbamoyl, and the corresponding R_{1a} or R_{4a} is hydrogen.
- 32-33. (Cancelled)
- 34. (Currently amended) A compound according to claim 19-1 having the formula IIb

$$R_1$$
 R_1
 R_2
 R_2
 R_2
 R_3
 R_4
 R_4

Hb

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or a pharmaceutically acceptable salt thereof, pharmaceutically acceptable prodrug thereof, an Noxide thereof, a hydrate thereof or a solvate thereof, wherein

R₁, R_{1a}, R₂, R_{2a}, R₄-, and R_{4a}, L₁ and Cy₁ are as defined in claim 1; are independently selected from hydrogen, earboxy, alkoxycarbonyl, Y₁Y₂NC(O), optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, optionally substituted heteroaryl and optionally substituted heteroaralkyl, or R1 and R10, R2 and R20 or R4 and R40 taken together form O or S; or R1 and R2 together with the carbon atoms through which R₁ and R₂ are linked form a cycloalkyl group, cycloalkenyl group, heterocyclyl group, or heterocyclenyl group; or R_{1a} and R_{2a} are absent and R₄ and R2 together with the carbon atoms through which R4 and R2 are linked form an aryl or heteroaryl group; or one or more of the pairs R1 and R1a taken together with the carbon atom through which they are linked form a 3 to 7 membered cycloalkyl or cycloalkenyl group; or R2 and R2 taken together with the carbon atom through which they are linked form a 3 to 7 membered eyeloalkyl or cycloalkenyl group; or R4 and R4a taken together with the carbon atom through which they are linked form a 3 to 7 membered cycloalkyl or cycloalkenyl group;

Cy, are independently selected from optionally substituted aryl, optionally substituted heteroaryl, optionally substituted eyeloalkyl, optionally substituted eyeloalkenyl, optionally substituted heterocyclyl, optionally substituted heterocyclenyl, optionally substituted fused aryleycloalkyl, optionally substituted fused aryleycloalkenyl, optionally substituted fused aryleterocyclyl. optionally substituted fused arytheterocyclenyl, optionally substituted fused heteroaryleycloalkyl, optionally substituted fused heteroaryleycloalkenyl, optionally substituted fused heteroarylheterocyclyl and optionally substituted fused heteroarylheterocyclenyl; L_1 is absent, O, NR₅, -S(O)p, $-S(O)pNR_5$, -C(X)Y or $-L_3$ -Q- L_4 -Q'- L_5 , -C(O)Y--C(X)Y, -C(X)YC(O).

-C(C)NR₅-S(O)p , or -C(O)C(O)NR₅S(O)p ; and

R₁₃ and R₁₄ are independently hydrogen, lower alkyl, aryl, heteroaryl, amino, acylaminoalkyl,

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alkoxycarbonylalkyl, carbamoylalkyl or alkoxyalkyl; or R_{13} and R_{14} together with the carbon atoms through which R_{13} and R_{14} are linked form a cycloalkyl group, cycloalkenyl group, heterocyclyl group, heterocyclenyl group, aryl group or heteroaryl group.

35. (Currently amended) A compound according to claim 19-1 having the formula IIc

$$\begin{array}{c|c} Cy_1 \\ \hline \\ N \\ \hline \\ R_{1a} \\ \hline \\ R_{2a} \\ \hline \\ Cy_2 \\ \end{array}$$

or a pharmaceutically acceptable salt thereof, pharmaceutically acceptable prodrug thereof, an Novide thereof, a hydrate thereof or a solvate thereof,

wherein:

Cy₁ is thiaheteroaryl or azaheteroaryl,

 L_1 is $-S(O)_2$ -, $-S(O)_2$ -alkylene-, $-S(O)_2$ -alkyenlene- or $-S(O)_2$ -alkynylene-;

 R_1 , R_{1a} , R_2 , and R_{2a} are independently hydrogen, alkyl, carboxyl, alkoxycarbonyl, or carbamoyl; L_2 is methylene; and

Cy₂ is azaheteroaryl, azaheterocyclyl, azaheterocyclenyl, fused azaheteroarylcycloalkyl, fused azaheteroarylcycloalkenyl, fused heteroarylazacycloalkyl or fused heteroarylazacycloalkenyl.

36. (Currently amended) A compound according to claim 19-1 having the formula IId

wherein R₁₇ and R₁₈ are independently hydrogen or halogen;

 J_1 is S or NH;

J2 is CH or N; and

R₂ is hydrogen, alkyl, carboxyl, alkoxycarbonyl, or carbamoyl.

37-44. (Cancelled)

- 45. (Withdrawn, but currently amended) A method for treating a patient suffering from a physiological condition capable of being modulated by inhibiting activity of Factor Xa comprising administering to said patient a pharmaceutically effective amount of a compound according to claim 1949.
- 46. (Withdrawn, but currently amended) A method for treating a patient suffering from a physiological condition capable of being modulated by directly inhibiting activity of both Factor Xa and Factor IIa comprising administering to said patient a pharmaceutically effective amount of a compound according to claim 4349.
- 47. (Original) A method for treating a patient suffering from a physiological condition capable of being modulated by directly inhibiting activity of both Factor Xa and Factor IIa comprising administering to said patient a pharmaceutically effective amount of a compound according to claim 35.
- 48. (Original) A method for treating a patient suffering from a physiological condition

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capable of being modulated by directly inhibiting activity of both Factor Xa and Factor IIa comprising administering to said patient a pharmaceutically effective amount of a compound according to claim 36.

- 49. (New) A compound according to claim 1 selected from the group consisting of
- 1-(2-Amino-quinoxalin-6-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-thieno[2,3-c]pyridin-2-ylmethyl-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-thieno[3,2-c]pyridin-2-ylmethyl-piperazin-2-one,
- 1-(2-Amino-quinolin-6-ylmethyl)-4-(6-chloro-thieno[2,3-b]pyridine-2-sulfonyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-(1-chloro-isoquinolin-6-ylmethyl)-piperazin-2-one,
- 1-(7-Amino-thieno[2,3-c]pyridin-2-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-quinolin-6-ylmethyl-piperazin-2-one,
- 1-(2-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 1-(4-Amino-thieno[3,2-c]pyridin-2-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-isoquinolin-6-ylmethyl-piperazin-2-one,
- 1-(2-Amino-quinolin-6-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 1-(1-Amino-isoquinolin-6-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 1-(1-Amino-isoquinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 1-(4-Amino-thieno[3,2-c]pyridin-2-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one,
- 1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-thieno[2,3-b]pyridine-2-sulfonyl)-piperazin-2-one,
- 1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-1H-benzoimidazole-2-sulfonyl)-piperazin-2-one,
- (S)-1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-3-ethyl-piperazin-2-one,
- (S)-1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-3-methyl-piperazin-2-one,
- (+/-)-1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-methyl-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-(5-oxy-1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-(1-methyl-1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(6-Chloro-thieno[2,3-b]pyridine-2-sulfonyl)-1-(1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-

one,

- 4-(6-Bromo-benzo[b]thiophene-2-sulfonyl)-1-(1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(5'-Chloro-[2,2']bithiophenyl-5-sulfonyl)-1-(1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 2-{2-[4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-2-oxo-piperazin-1-ylmethyl]-pyrrolo[3,2-c]pyridin-1-yl}-acetamide,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-[1-(2-hydroxy-ethyl)-1H-pyrrolo[3,2-c]pyridin-2-ylmethyl]-piperazin-2-one,
- 4-(6-Chloro-1H-benzoimidazole-2-sulfonyl)-1-(1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(1H-Benzoimidazole-2-sulfonyl)-1-(1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-1-(1H-pyrrolo[2,3-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(6-Chloro-thicno[2,3-b]pyridine-2-sulfonyl)-1-(1H-pyrrolo[2,3-c]pyridin-2-ylmethyl)-piperazin-2-one,
- 4-(6-Chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-1-(1H-pyrrolo[3,2-c]pyridin-2-ylmethyl)-piperazine-2-carboxylic acid amide,
- (3S,5S)-1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-3,5-dimethyl-piperazin-2-one,
- $\label{lem:condition} \hbox{1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one, }$
- 1-(S)-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-3-methyl-piperazin-2-one,
- 1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid methylamide,
- 1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid ethylamide,
- 1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid dimethylamide,
- 1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-(morpholine-4-carbonyl)-piperazin-2-one,
- (+/-)-1-(4-Amino-quinazolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid amide,
- 1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid methylamide,

1-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid ethylamide,

- l-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-oxo-piperazine-2-carboxylic acid dimethylamide,
- l-(4-Amino-quinolin-7-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-6-(morpholine-4-carbonyl)-piperazin-2-one, and
- 1-(3-Amino-1H-indazol-6-ylmethyl)-4-(6-chloro-benzo[b]thiophene-2-sulfonyl)-piperazin-2-one, or a pharmaceutically acceptable salt thereof, pharmaceutically acceptable prodrug thereof, an N-oxide thereof, a hydrate thereof or a solvate thereof.